DOCUMENT RESUME

ED 300 006 IR 052 457

TITLE IFLA General Conference, 1987. Division of Management and Technology. Statistics Section. Papers.

INSTITUTION International Federation of Library Associations, The Hague (Netherlands).

PUB DATE Aug 87

NOTE 13p.; Papers presented at the International Federation of Library Associations (IFLA) General Conference (53rd, Brighton, England, August 16-21, 1987).

PUB TYPE Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.

DESCRIPTORS Academic Libraries; Cost Effectiveness; Developed Nations; Foreign Countries; Government Role; Higher Education; Library Associations; *Library Statistics; *Management Information Systems; Microcomputers; National Libraries; Needs Assessment; Public Libraries; Reports; *Trend Analysis; *Use Studies

IDENTIFIERS Time Series Analysis

ABSTRACT

The four papers in this collection focus on the analysis and use of library statistics in various situations: (1) "Statistics for Management and Trend Analysis: A SCONUL Experiment" (Anthony J. Loveday, United Kingdom), which discusses the work of the Standing Conference of National and University Libraries (SCONUL) in the collection and processing of data into ratios useful for comparative purposes in a time-series and for use in supportive management decisions; (2) "Canadian Library Statistics: Current Use and Future Developments" (Beryl L. Anderson, Canada), which briefly describes the sources of Canadian statistics, discusses two basic needs statistics may fulfill, and considers some of the ways Canadian libraries use statistics; (3) "Analysis of Library Statistical Data with Microcomputer Software: U.S. Applications" (Philip M. Clark, United States), which describes how microcomputer spreadsheet programs and database managers can be used to tabulate and analyze library statistical data; and (4) "Four Decades of International Library Statistics" (Khin Wai Thi, France), which provides a retrospective overview of international library statistics over approximately four decades, and exhorts participants to a discussion of extending/updating and making additional proposals to the recommendation adopted by the Unesco General Conference in 1970 to improve the national collection and international reporting of library statistics. (CGD)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

53rd IFLA COUNCIL
& GENERAL CONFERENCE
BRIGHTON, UNITED KINGDOM
16 – 21 AUGUST 1987

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.



ED300006

Division of Management and Technology

# SECTION ON STATISTICS

*Sessions: 109 Tuesday 13.00 – 14.30*
*153 Wednesday 10.30 – 12.00*

Statistics for management and trend analysis: a SCONUL experiment *(12-STAT-1-E)*
Anthony J Loveday
Standing Conference of National and University Libraries UK

Canadian library statistics: current use and future developments *(35-STAT-2-E)*
Beryl L Anderson
formerly of National Library of Canada
Ottawa Canada

Analysis of library statistical data with microcomputer software: US applications *(36-STAT-3-E)*
Philip M Clark
St John's University
Jamaica New York USA

Four decades of international library statistics *(96-STAT-4-E)*
Khin Wai Thi
Unesco
Paris France

IR052467

Data conversion by Saztec Europe
as a contribution to IFLA 1987

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
A.L. Van Wesemael
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."



BEST COPY AVAILABLE

# STATISTICS FOR MANAGEMENT AND TREND ANALYSIS: A SCONUL EXPERIMENT

Anthony J LOVEDAY, *Secretary, Standing Conference of National and University Libraries, UK*

**ABSTRACT**

*There has been a proliferation of demand in the United Kingdom for the provision of statistical data as demand for demonstrable cost-effectiveness has been called for. The university libraries have not escaped. The situation has been complicated by the fragmented nature of the requests and the authorities making the demands. The Standing Conference of National and University Libraries, using long-standing experience of the situation, has devised the collection of data on expenditure and on library activity in the UK university libraries. These data have been processed into useful ratios. As the data have been collected on a consistent basis by the use of careful definitions and from a consistent base it has been possible to use the ratios for comparative purposes in a time-series, which can support management decisions. Details of the data elements and the ratios are given.*

Increasingly funding authorities are pressing librarians to demonstrate the performance of their library services by some form of indicators which can be used to check the effectiveness achieved in expenditure. They can also be used to monitor trends as well as assisting the process of the assessment of some of the consequences of management changes. Of course such performance indicators do not usually indicate anything about the 'quality' of the service and the process of devising indicators is much more amenable to quantitative measures based upon the regular collection and analysis of statistical data. A consequence has been the proliferation by various authorities of the number of statistical questionnaires in recent years. Many of these are, in the view of librarians, ill-conceived and frequently not useful in providing relevant data that helps the librarian assess performance, make constructive management decisions, monitor the consequences of these decisions and study trends.

There is furthermore the problem of finding a consistent basis for comparison between libraries serving the same type of clientele but with a different historical evolution. The problem of making meaningful comparisons can be compounded by the various and differing political targets which a library may identify or the varied expectations of parent authorities.

The annual reports of libraries frequently provide some basic statistical data, usually in the form of simple raw figures: the number of donated volumes acquired, the number of loans, the amount of money expended, the number of catalogue entries created and so forth. In the United Kingdom there has been little attempt generally to standardise either the data collected, or the form of its presentation; each library preferring to present its performance in a manner most readily assimilated by its parent authority. This has been the traditional academic library position in the United Kingdom.

This situation has been aggravated by the number of different interested authorities requiring information with differing objectives in mind. For example the Department of Education and Science as the main government department responsible for the non-university sector of higher education has required the reporting of certain data; the University Grants Committee (UGC) as the funding authority for universities has called for a different set of data ranging from expenditure figures from Finance Officers of universities, space utilisation figures from University Building Officers, and more general library statistics for its Steering Group on Library Research established in the Post-Atkinson era. The Office of Arts and Libraries wants data on public libraries for inclusion in the report to Parliament by the Minister for Arts and Libraries and more recently has wanted academic library statistics (on a difference basis from the UGC) in order to complete its picture of library resources. Government has also been demanding as part of its call for greater efficiency or cost effectiveness in higher education that the universities produce performance indicators. The professional associations and the government departments concerned with manpower and employment have needed details of grades of library staff and the number of employees pursuing careers in library work.

During the early Seventies the Standing Conference of National and University Libraries (SCONUL) collaborated with the Library Association in the gathering of data for university libraries, which the Library Association required for briefing itself on the adequacy of university library funding; while SCONUL wanted to provide its membership with data which would help individual institutions in their negotiations for improved funding. But such data was provided inconsistently in the absence of any formal definitions (it being left to the reporting institution to make its own interpretation of what was required). Processing the data was limited to their tabulation and this was accompanied by notes differentiating the basis on which the figures had been compiled that were almost as numerous as the figures themselves. The information which was reported was merely the tabulated details of expenditure. As the data were not consistently collected, expressed as ratios or studied for trends, they were of limited value. At a meeting of SCONUL at this time one University Librarian put forward an idea that maybe we should process centrally the expenditure data provided in order to produce more meaningful ratios calculated on a standardised basis. Such a proposal was considered too novel and was rejected! However, the germ of an idea was sown.

The next significant step was the interest shown in the problem of getting a real idea of the comparative costs of various library costings. A SCONUL committee examining the problem of how to analyse the expenditure of all university library institutions in order to get a clearer idea of for example the cost of an inter-library loan ran into difficulties in formulating how total staff costs should be divided. This problem illustrated the basic difficulty in collecting and analysing costs between institutions widely different in organisation and tradition. Fortunately the British Library Research and Development Department showed considerable interest in finding a solution that would make comparison of costs of library services in UK universities and polytechnics. It agreed to fund a research project into the development of cost comparisons and awarded a contract to an organisation with considerable experience in establishing inter-firm cost comparison in the commercial sector.

Much time was spent on formulating definitions and testing them with a small pilot group. The methodology was then applied to a larger but carefully selected group of institutions. However, the programme of the research work was constrained by certain time factors, and the larger trial was undertaken on the basis of retrospectively analysed data. This resulted in eroding the credibility of the data and institutions were very conscious of the time taken up with the analytical work. For these reasons attempts to extend the study to the whole higher education sector on a regular basis were abandoned. But the educative process was invaluable.

Over the two years that this work had been going on SCONUL decided that some of the lessons that were being learned applied equally to the expenditure data that was being collected. Definitions were evolved and tested and a number of useful ratios were determined as a basis for institutional comparison and trend identification. The University of St Andrews through the active and sympathetic co-operation of the University Librarian, Mr Graham Mackenzie, and his staff offered its computer as the host to the project. The data elements from which the ratios are calculated are given at Table One. The ratios calculated for each institution are set out in Table Two. It also seemed desirable to present the institutional data in the form of comparative bands arranged by student numbers. Details of these Bands are set out in Table Three.

British universities have always been very conscious of their individuality and their varied history, which they maintain has affected the way they operate and therefore the way in which money is spent on various services. To assist them in using the ratios in a more meaningful and harmonious fashion the ratios have been reworked and presented in 9 groups of similar institutions. The details of these are given in Table Four.

In the first years there was a great barrier to the collection and publication of the data: confidentiality. This emanated from a defensive attitude on the part of universities and there was anxiety that the publication of identifiable data might result in their use against the interests of a parent institution. However, the situation has gradually changed and with the financial cuts currently being imposed on universities and the interest and action of less well-informed university staff the pressure to ensure that accurate and defensible data were available has influenced the situation. Those who were formerly reluctant to accept publication of their data have now been willing to collaborate; only a couple of institutions still maintain an embargo on the publication of their data and even these permit their use in the calculation of the national and banded ratios.

Each year the preface to these published statistics comprises a trend analysis and this has been used in presenting arguments to Vice-Chancellors, University Finance Officers and Committees, and in submissions to Ministers and the UGC with some measure of success. This analysis has enabled us to point to the changes in the pattern of expenditure which have drawn attention to the way in which libraries have been constrained. We have been able to show that while the recurrent university grants have risen to take some if not all account of increased student numbers and the inflation rate, these increases have not been passed on to the libraries on a comparable

scale, and that as a result of an increase in book and periodical prices above the retail price index level, libraries have actually suffered a reduction in purchasing power. Similarly we have been able to demonstrate that it has been in the smaller institutions that the greatest reductions have occurred.

Now SCONUL has embarked on the second stage: data about library operations. The output, if you prefer, in terms of the expenditure investment. Over the past three years, raw data have been collected covering various aspects of the collection and use of stock. A second database has been set up by SCONUL with the financial assistance of BLRDD, which is providing useful experience and helpful information.

This database is compiled on a similar basis to the expenditure database. It has been established at the University of Southampton, in a form that will make the data readily transportable from the database via the Joint Academic Network that links University and Polytechnic computer centres. The data elements are given in Table Five. The ratios worked from the raw data are set out in Table Six. The same size and type bands used for the expenditure tables are also available. Work still continues on refining these. As the tables are available for only two years at the present time analysis of trend has not yet been possible, but it is intended that this should be undertaken. This has proved timely. Now the government and the universities themselves are seeking performance indicators, and while we have grave doubts about the use of output measures as real indicators of performance it is preferable that such data should be consistent and be derived from information collected by those that understand library systems. Our reservations are based partly upon an anxiety that judgements will be based upon the cheapness of the service, and not the quality of the end product (ie the quality of the research or the quality of the student performance).

SCONUL would now like to proceed to producing cost data, and we have been giving some preliminary thought to whether it would be possible to marry the two sets of data in some way. But there are some serious problems: the expenditure data are related to the number of full-time equivalent students – the basis of funding universities. Operational data are related to the number of library users, in order to reflect traffic loads etc. Reprocessing the data using some common notional unit might be one solution. But as yet no decisions have been reached. There will, we hope, be ample material to support research into trends and enable librarians to model the consequences of change (for example the effects of change in expenditure on various services) which perhaps will lead to a more informed and effective use of resources. We certainly intend to continue to be active in this field.

Such an account should not ignore some of the more negative experiences. The collection of data has proved to be time consuming. But it is believed that the time spent has been justified for several reasons. The pressure from government, funding authorities and committees for detailed management information and justification for expenditure has greatly increased. Others less experienced in collecting meaningful data would certainly have embarked on these analyses if the librarians had not done so. The financial constraint that has hit academic libraries over the last ten years has made the analysis of the trends and the detailed effects of the cuts in funds an essential tool in making informed management decisions, both in producing time series for an individual institution, for groups of similarly placed institutions and in providing a national picture. Another criticism has been the comparative lack of use that has been made of the data in examining some of the more interesting trends, and little attempt has so far been made to use the tables for detailed research and modelling. This, however, I believe, will happen when we have data covering a few more years.

**REFERENCES**


*CENTRE FOR INTER-FIRM COMPARISON. Inter-Library Comparisons in Academic Libraries. British Library Research and Development Report 763. 1984.*

*COMMITTEE OF VICE-CHANCELLORS AND PRINCIPALS. Report of the Steering Committee for Efficiency Studies in Universities (The Jarratt Report). London 1985.*

*LIBRARY ASSOCIATION and* STANDING CONFERENCE OF NATIONAL AND UNIVERSITYLIBRARIES. University Library Expenditure for the session 1969/70 to 1978/79. London 1971-80. Abstract of Confidential Typescript.

LINE (Maurice B). Library Goodness; paper given at the UC&R Study Conference 'Fit for the Future' held at the University of Reading *in* University College and Research Section of the Library Association Newsletter. No. 20. 1986.

MACDOUGALL, A. The current position of statistical series relevant to libraries and their possible future development. British Library Research and Development Report 81/OPA/211. London. 1984.

NAYLOR (Bernard). Library output and Preformance Measures; paper given to UC&R West Midlands Group, October 1985 *in* University College and Research Section of the Library Association Newsletter. No. 18. 1986. p. 7-9.

STANDING CONFERENCE OF NATIONAL AND UNIVERSITY LIBRARIES. SCONUL Statistical Database Part 2: Library Operations 1984/85 – (in progress) London 1986-. Typescript. Annual.

STANDING CONFERENCE OF NATIONAL AND UNIVERSITY LIBRARIES. University Library Expenditure Statistics, 1980/81 – (in progress) London 1981-. Typescript. Annual.


**TABLE ONE: DATA ELEMENTS ON EXPENDITURE**

00 Total University expenditure, all sources
- 01 Total expenditure, UGC recurrent grant
- 02 Total other expenditure
- 09 Total University expenditure, current year

10 Student numbers
- 19 Student numbers, current year

20 Library staff numbers
- 21 Academic-related
- 22 Senior Library Assistants (if not in 21)
- 23 Library Assistants
- 24 Clerical staff
- 29 Library staff numbers, current year

30 Para-Library staff numbers
- 31 Bindery
- 32 Photographic/reprographic
- 33 Porters etc
- 34 Cleaners
- 35 Other
- 39 Total Para-Library staff numbers, current year

40 Acquisitions expenditure from Library Recurrent Grant
- 41 Books
- 42 Serials subscriptions
- 43 Serials back-sets
- 44 Microforms
- 45 Other non-book materials
- 49 Total acquisitions estimate from Library Recurrent Grant, current year

50 Library Recurrent Grant – operating costs and sundries
- 51 Binding – in-house
- 52 Binding – commercial
- 53 Computer use (housekeeping) – notional transfer of funds
- 54 Computer use (housekeeping) – bureau or other 'real' charge
- 55 Computer use (information retrieval)
- 56 Stationery, printing, photography, reprographics
- 57 Inter-Library loan
- 58 Other
- 59 Total operating cost estimate, current year

60 Library staff costs
- 61 Academic-related
- 62 Senior Library Assistants (if not in 61)
- 63 Library Assistants
- 64 Clerical Staff
- 69 Salary estimate for current year

70 Para-Library staff costs
- 71 Bindery staff
- 72 Photographic/reprographic
- 73 Porters etc
- 74 Cleaners
- 75 Other
- 79 Salaries and wages estimate, current year

80 Expenditure not from Library Recurrent Grant
- 81 Acquisitions
- 82 Operating costs
- 83 Temporary Library staff
- 84 Temporary Para-Library staff
- 85 Postage and telecommunications
- 86 Other
- 89 Estimate, current year

90 Total Library Expenditure
- 91 Total Library Recurrent Grant expenditure
- 99 Total Library Recurrent Grant estimate for current year

**TABLE TWO: RATIOS OF EXPENDITURE**

**Definition of Percentages and Ratios**

**1: Percentages**

a Total Library Expenditure : Total University Expenditure
b Library Recurrent Grant Expenditure : Total University Expenditure
c Acquisitions Expenditure : Total University Expenditure
d Acquisitions Expenditure : Library Recurrent Grant Expenditure
e Books Expenditure : Library Recurrent Grant Expenditure
f Serials Expenditure : Library Recurrent Grant Expenditure
g Operating Expenditure : Library Recurrent Grant Expenditure
h Total Staff Expenditure : Library Recurrent Grant Expenditure
i Serials Expenditure : Acquisitions Expenditure
j Professional Staff Expenditure : Total Staff Expenditure

**2: '£ per -'**

k Library Recurrent Grant Expenditure : Students
l Acquisitions Expenditure : Students
m Operating Expenditure : Students
n Total Staff Expenditure : Students
o Acquistions Expenditure : Library Staff
p Library Recurrent Grant Expenditure : Library Staff
q Library Recurrent Grant Expenditure : Professional Staff
r Professional Staff Expenditure : Professional Staff
s Other Staff Expenditure : Other Staff

**TABLE THREE: SIZE BANDS**

**Size bands used**

**Mode A**

| | |
|---|---|
| Band 1 | 1 – 2500 students |
| Band 2 | 2501 – 4500 students |
| Band 3 | 4501 – 7000 students |
| Band 4 | 7001 – students |

**Mode B**

| | |
|---|---|
| Band 1 | 1 – 1002 students |
| Band 2 | 1003 – 2609 students |
| Band 3 | 2610 – 3209 students |
| Band 4 | 3210 – 3738 students |
| Band 5 | 3739 – 4600 students |
| Band 6 | 4601 – 5432 students |
| Band 7 | 5433 – 7051 students |
| Band 8 | 7052 – 11598 students |
| Band 9 | 11599 – students |

**TABLE FOUR: LIBRARY GROUPS BY TYPE**

'Ancient Scottish'
'Larger Civic':
'London':
'New'
'Oxbridge':
'Republic of Ireland'
'Smaller Civic'
'Technological'
'Welsh'

**TABLE FIVE: DATA ELEMENTS ON OPERATIONS**

**A Accommodation and Stock**

0 Total, all shelving
1 Total, open access shelving
2 Total, closed access shelving
3 Total, reserve shelving
5 Total, occupied, all shelving
6 Total, occupied, open access shelving
7 Total, occupied, closed access shelving
8 Total, occupied, reserve shelving
9 Total, unoccupied shelving

**B Special Collections**

0 Total occupied shelving
1 Open access occupied
2 Closed access occupied
3 Reserve store occupied
5 Closed access not yet occupied
6 Reserve store not yet occupied

**C Acquisitions (in metres)**

0 Stock added during year
1 Purchases
2 Gifts and exchanges
3 Legal deposit
5 Books
6 Periodicals
7 Non book materials
8 Manuscripts
9 Stock disposed of during year

**D Transfers to Reserve (in metres)**

0 Stock transferred during year
1 Books
2 Periodicals
3 Non book materials

**E Transfers from Reserve Stores to Main Stock (in metres)**

0 Stock transferred
1 Books
2 Periodicals
3 Non book materials

**F Library Users**

0 Total potential university borrowers
1 Academic staff
2 Postgraduates
3 Undergraduates
4 Full time equivalent students
5 Other registered borrowers
6 Other staff registered as borrowers
7 Other registered borrowers
9 Registered readers (*not* borrowers)

**G Library Occupancy**

2 Number of seats
3 Average number of readers in library
4 Average number of users entering library (by sample)
5 Number of seat/hours per week
6 Total turnstile figures for year

**H Use of services (by sample day/week)**

1 Number of forms issued
2 Number of forms returned
3 Number of items consulted
4 Number of users entering library on sample day
5 Number of loans and renewals
6 Number of short enquiries in week
7 Number of extended enquiries in week
8 Number of searches on computerised databases per year
9 Number of man/hours of formal group instruction per year

**J Loans**

0 Total number of loans
1 Total number of short term loans
2 Total number of medium term loans
3 Total number of long term loans

**K Reservations, recalls and overdues**

0 Total number of reservations handled
1 Total number of reservations handled for short term loans
2 Total number of reservations handled for medium term loans
3 Total number of reservations handled for long term loans
5 Total number of recalls and overdues handled
6 Recalls
7 Overdues

**L Interlibrary Loans (you borrow)**

1 Number of requests made from stock
2 Number of requests satisfied from stock
3 Number of requests not proceeded with
4 Number of applications made
5 Number of applications satisfied
6 Number satisfied by BLLD stock
7 Number satisfied *via* BLLD from other libraries
8 Number of other satisfied requests
9 Number of requests not satisfied

**M Interlibrary Loans (you lend)**

1 Applications received from other libraries
2 Items supplied to other libraries

**N Other Information**

1 Number of physical units bound, etc in house
2 Number of physical units bound, etc commercially
4 Number of sets of catalogue records added during year
5 Number of sets of catalogue records withdrawn
8 Number of current periodical titles received by purchase
9 Number of current periodical titles received by gift or exchange

**TABLE SIX: RATIOS OF OPERATIONS**

| Ratio or Percentage |
|---|
| Installed shelving (m/100 population) |
| Occupied shelving (m/100 population) |
| Unoccupied shelving as % of Total installed |
| Total Open Access Shelving as % of Total installed |
| Total Reserve Shelving as % of Total installed |
| Total occupied Special Collections as % of Total occupied shelving |
| Metres of year's acquisitions as % of unoccupied shelving |
| Acquisitions (m/100 population) |
| Serials Titles per 100 population |
| |
| Seats per 100 population |
| Seat-hours per 100 population |
| Average seats occupied (%) |
| Users present per 100 population |
| |
| Loans per 100 people entering |
| Consultations per 100 people entering |
| Consultations per 100 loans |
| Consultations per completed form |
| Enquiries per 100 population |
| All enquiries as % of people entering on sample day |
| Loans per 100 population |
| Service Desk Activity per 100 population |
| Reservations per 100 loans |
| Recalls/Overdues per 100 loans |
| Out-going Interlibrary loans as % of in-coming ILL |
| Interlibrary loan success rate (%) |

---

*35-STAT-2-E*

# CANADIAN LIBRARY STATISTICS: CURRENT USE AND FUTURE DEVELOPMENTS

BERYL L. ANDERSON, *Formerly Chief, Library Documentation Centre, National Library of Canada, Ottawa, Canada*

**ABSTRACT**

*In Canada, library statistics may be gathered by Statistics Canada, the federal department responsible for compiling national statistics; by provincial public library agencies; or by specialized library associations.*

*Statistics serve both managerial and national needs. Managerial statistics used as a basis for decisions on the library's operations, for lobbying, and for identifying local trends. They can rarely be aggregated.*

*National statistics ideally cover all libraries in the country and are used to identify national trends, to derive de facto* norms, and to contribute to international statistics compilations. They support policy-making and planning and allow broad-based inter-library comparison.

Library statistics should be complete, consistent and comparable, and should describe both inputs to the library (e.g., collections, funding) and outputs (e.g., document and information delivery). The National Librarian of Canada is currently working with those responsible for statistics to investigate a cooperative solution to the present gaps in Canadian library statistics at the national level.

Before discussing some of the ways Canadian libraries use statistics, it is necessary to describe briefly the sources of Canadian statistics and the two basic needs statistics may fulfil.

Library statistics may be *managerial* or *national*. Managerial statistics are ordinarily gathered by the individual library to aid in making the decisions necessary for the sound operation of the library. They are needed for what is essentially short term planning. Sometimes such statistics are gathered by a group of libraries sharing common characteristics, to aid both short and medium-range planning. Such statistics put a library into the context of a peer group whose norms and trends provide additional guidance or models for the individual libraries in the group. National statistics, on the other hand, are required to give a profile of the library community as a whole, to fit individual libraries or groups of libraries into a national rather than a local context, and to permit long-range planning. National statistics allow the derivation of national norms and national trends. The first are important for national and perhaps international comparisons; the second, for the information that trends give on the development of this major cultural sector.

**Sources of Statistics**

Canada is fortunate in having a central agency, Statistics Canada, with a mandate to collect national statistics in any field. Until the early 1980's it conducted regular surveys of academic and public libraries (special library surveys were dropped in the early sixties). Because of current restraints, Statistics Canada is now surveying only the public libraries.

Publication of the Statistics Canada surveys tends to be slow. This has led to some library associations setting up data collection schemes of their own in order to obtain more current data for budgeting, planning, or lobbying purposes. Notable are those sponsored by the Council of Administrators of Large Urban Public Libraries covering 32 libraries, and the Canadian Association of Research Libraries, covering 26. Their coverage in terms of numbers is quite limited, but for the most part they do provide their members with more timely managerial statistics.

Provincial public library agencies have met the problem of slow publication by distributing questionnaires which meet their own and Statistics Canada's requirements. They take the data from the questionnaires before they send them on to Statistics Canada, and may thus be able to publish earlier than Statistics Canada. School and college libraries are rarely, and special libraries almost never, surveyed. (A few surveys for law and some government libraries exist.)

Whatever the source of the statistics, the data tend to be concentrated on what happens to inputs to the library, that is, on the use of funds to provide premises, materials (book or other) and staff to organize the materials and facilitate their use. There is little stress on outputs such as the use of space – whether amount of seating or hours open; or on the provision of information, whether bibliographic citations or actual answers to users' questions. Document delivery – the use of the library's materials – is better covered; figures for direct circulations and inter-library loan traffic are commonly gathered. Information on special programming (eg., services for indigenous people or for the disabled; or Canadian cultural programmes) is rarely collected.

**Uses of Statistics: Managerial**

In spite of gaps, the statistics that are available do assist managers in the operation of their libraries. Primary managerial uses include:

(1) Use of statistics as a basis for reaching decisions on operational questions. For example:

Evidence for changes in use, such as a rise or fall in circulation or reference statistics, guides public library decision making on such matters as location of new branches or the closing of old ones; on redeployment of staff to new areas because of changes in amount of work or type of demand, such as service to a growing ethnic community; or a revision of budget allocations to accommodate purchase of on-line services in the hope of cutting search time while providing extra resources. University libraries may track acquisitions budgets very carefully in order to ensure that the allotment for serials subscriptions does not increase to the detriment of book purchases. Special library statistics on types of reference requests received can be analyzed to trace changes in subject interests of users.

(2) Use of statistics to make the library's case to library boards, government agencies and the library's community.

Evidence for local changes but, even more, comparisons with peers may be used to lobby governing bodies in order to maintain or improve support for the library, especially in funding. University libraries, for example, have analyzed statistics from libraries of comparable size and comparable programmes to show where their institutions stand in relation to the group; whether, for example, they are maintaining their relative position in size of collection or are declining, as one such Canadian study demonstrated.

Public libraries make similar analyses of provincial statistics. Public library agencies (ie., provincial government departments or other bodies responsible for public libraries) include per capita figures in annual statistical publications. These allow libraries of different sizes or in different types of political unit to compare their activities and outputs with those of their peers. One province, Ontario, issues a booklet for library board members specifically for comparative purposes and calls it, not surprisingly, *How Do You Compare?*

A provincial association of teacher-librarians regularly publishes comparative data for its members. On occasion, it adds a list of suggestions as to how members may use statistics to lobby local school boards or a government ministry for support.

(3) Use of managerial statistics as a means of identifying trends for short-term planning, either within a library's own operations or within a peer group.

In order to do this, the library – or group – must have followed the same definitions for the elements being counted and done so consistently over time, otherwise the figures are useless. Such trend data will, of necessity, be limited and cannot be compared with other data compiled on a different basis. Consequently, no aggregation of local statistics will provide an understanding of the library situation in the country as a whole. For this, nationally-compiled statistics, or statistics compiled to a national standard, are needed.

**Uses of Statistics: National**

(1) A prime use of national statistics is the identification of trends that apply country-wide.

Trend data can guide policy-making and planning at the national level – provided that they are based on complete, comparable and consistent statistics. Canadians are fortunate in that Statistics Canada data meet these criteria – at least for the years in which they were gathered. Moreover, the data are held on computer and can be manipulated in various ways to meet specific needs for statistical series and analyses that have not formed part of a published report. The National Library, for example, took advantage of this service to have a ten-year common file of data (1972-1982) prepared from the university and public library surveys. (As you know, non-response is a problem with any questionnaire; a 'common file' consists of data for the libraries which have returned every questionnaire during that period – although they may not have answered every question on each one.) Using these common file tables the Library Documentation Centre of the National Library has been able to answer such questions as: Was interlibrary loan among public libraries increasing during the period covered? (Yes, – it more than doubled.) In university libraries were materials expenditures increasing in current dollars? (Yes.) Were volumes acquired also increasing? (No. If 1978/79 = 100, the index for 1982/83 would be only 70.6.) In the last five-year period, was the proportion of professionals on staff steady – declining – rising in public libraries? In university libraries? (In both the proportion remained fairly constant at roughly 23% and 21% respectively.)

Where library systems are centralized, national trend data can be used by governments to assess funding and staffing needs and set priorities. Even where systems are not centralized, as in Canada, trends can be used to assess the impact of library expenditures on the gross national product, on employment, on the publishing industry, etc.

(2) A second use of national statistics is to facilitate inter-library comparisons on a country-wide basis.

In essence, the search for comparisons is a search for norms. Given a user community of a certain size (e.g., students in a school), how many staff should the library have? What should be the ratio of professionals to assistants or clerical staff? What are average or median salaries for each group? In this province? In other provinces? Norms derived in this way may not be the ideal, but they do enable library managers at the local level to put their operations into perspective. They also enable librarians, their sponsoring bodies and higher levels of government to draw a national profile of the institution.

(3) Finally, only national statistics can contribute to Unesco's efforts to collect international library statistics.

Some of you, doubtless, have commented on the new library statistics standard being developed by the International Standards Organization. Let us hope that widespread adherence to the standard for national statistics will lead in time to comparable world statistics on these important cultural, informational and educational institutions.

**Criteria for library statistics**

I think you can see from the foregoing examples that library statistics can be very helpful for both managerial and national purposes. But – to repeat – they must be consistent, complete and comparable or they are useless. They should also meet the needs of the people who will use them. In Canada, as you have seen, we have serious gaps in coverage to overcome. In addition, we have generally, like others, concentrated on gathering statistics concerning inputs – data on premises, staff and collections. Statistics on outputs tend to be few or non-existent – statistics, for example, on access to premises (in terms of hours or seating), on document delivery, information delivery, special programmes and services. Admittedly outputs are harder to define and the data are more difficult to collect, but they are essential if we are to quantify, meaningfully, what libraries do for their communities. Thumping the table and affirming one's intuitions – to echo a distinguished British information scientist – are no longer adequate substitutes for reliable statistics – if they ever were!

**Future Canadian developments**

The National Librarian of Canada, concerned about the problem of national statistics, held an invitational meeting on the subject in March 1987. Present were representatives of the Canadian government departments most concerned, provincial library agencies, library associations, granting bodies, provincial education ministers, publishers, and so on. The group agreed that greater cooperation was needed among the various producers of statistics in order to improve statistical coverage. They felt that the first step towards this objective should be the development of a core questionnaire, applicable to all types of libraries, and taking the need for output statistics into account. The National Librarian has formed a task group to produce such a questionnaire, and anticipates their report by the end of 1987. It will be some years before the goal of complete national coverage is reached, but the people at that March meeting felt we have made a good start.

**References**

"Files of Statistics Canada Library Surveys." *National Library News*, v. 17, no. 4-5, April-May 1985. p. 6.

"Library Statistics Common Files – a Recent Example of Use." *National Library News*, v. 18, no. 3-4, March-April 1986. p. 5-6.

---

*36-STAT-3-E*

# ANALYSIS OF LIBRARY STATISTICAL DATA WITH MICROCOMPUTER SOFTWARE: US APPLICATIONS

Philip M. Clark, *Associate Professor, Division of Library and Information Science, St. John's University, Jamaica, New York, USA*

**ABSTRACT**

*This paper will describe how microcomputer spreadsheet programs and database managers can be used to tabulate and analyze library statistical data. Spreadsheet programs such as Lotus 1-2-3 are commonly used to summarize and prepare reports of transaction data – eg., daily circulation, reference questions asked, expenditures made. While versatile, spreadsheet programs are less effective in manipulating large files and re-arranging data than database managers. New approaches to database management for numerical analysis have been produced in the form of "analytical databases". Two examples of this type of software are discussed – Reflex and Javelin. Both excel at examining multi-unit or -divisional library systems. Javelin, in particular, is especially well designed to analyze time-series data with a number of built-in routines for trend line computation. It is concluded that library analysts have effective new tools to aid their work.*

Microcomputer software such as electronic spreadsheets and database managers can ease the work of tabulating and analyzing library statistical data. Within a single library, this software can be used to record and analyze data such as the number of daily transactions that occur at reference desks or the number of items circulated (issued) by various categories. Statistics on stock acquired or disposed of are also prime candidates for study using microcomputer software.

Transaction data like that illustrated above can be summarized by the date of its occurrence thus providing the basis for time series analysis. Such analysis can provide clues to the regularity or irregularity of patterns of activity. Recently released versions of many software programs provide sophisticated analytical tools to perform this type of analysis.

While the recording, describing, and analysis of data for a single library unit can be, in itself, a difficult problem, the analysis of statistical data for a multi-unit library system poses additional problems. For example, a public library system may have a number of branch or satellite libraries all collecting the same basic statistics. Likewise, a university may have science, medical, law, humanities, or undergraduate libraries all collecting the same information. Or, a corporation or governmental agency may have libraries scattered throughout their marketing territory or realm of jurisdiction. Combining these individual reports into a system-wide summary can be a demandingtask but one made easier with recent advances in microcomputer software.

It is the intent of this paper to describe several microcomputer software programs that can be effectively used to analyze library statistical data. In that such data is largely numeric, software that features numerical computation will be the focus. Specifically, electronic spreadsheets such as Lotus 1-2-3 and "analytical databases" such as Reflex and Javelin will be described and their functions illustrated with typical data from library settings.

**Transaction Data**

A broad variety of data exists that we term "transaction data". It represents events that occur from time to time such as the charge-out of a book,the answering of a question, the addition to the collection of a new periodical number, etc. The counting and summarizing of these events is often a time consuming process in libraries – but a process that must be undertaken.

One of the most used type of microcomputer programs for dealing with transaction data is the electronic spreadsheet program. In the US, the best selling program of this type is Lotus 1-2-3 for the IBM-PC and that machine's clones and compatibles. Other spreadsheet programs with large followings are MultiPlan and SuperCalc for IBM-type machines, VisiCalc for early Apple,Radio Shack and other computers, Appleworks and SuperCalc for the later Apple II series, and Excel for the Macintosh computer.

All spreadsheet programs have similar basic functions that allow a person to enter columns and rows of numbers and then perform mathematical operations on the numbers. A typical spreadsheet application is shown in Figure 1 where data for fiction, nonfiction and other types of circulation are entered for each day and then summarized. Formulas that sum a range of data are entered in rows 16 through 18 as well as in column E. The results of the formulas will show on the screen and in print. A variety of mathematical functions are built into spreadsheet programs such as the arithmetic mean (AVG in row 17) or even the standard deviation (STD in row 18). This template can be saved and, upon removing the previous month's data, new data can be inserted and quickly calculated.

Figure 1 illustrates a very simple application of a spreadsheet program to a library problem. Such simple tabulation applications probably constitute the vast majority of uses of spreadsheets for library statistical purposes.[1]

Database managers can also be used to summarize transaction data. The dBase series from Ashton-Tate is the most popular of the relational database managers in the US. RBase System V also has its adherents. But simple file-managers such as PFS:File, PC-File III, and others can be used to do simple summarization.

Recently, a new class of database managers termed "analytical databases" has emerged that combine the sophisticated mathematical capabilities of the spreadsheet with the superior sorting and searching capabilities of the databasemanager. Among the several that might be included in this category are Reflex, Reflex for the Mac, and Javelin.

Figure 2 is a data entry form created in Reflex for the daily circulation data illustrated in Figure 1. There are fields for a library name, the date, the three circulation statistics, and a sum total of circulation. The Total Circulation field is calculated with a simple formula constructed with the fieldnames to be summed. The formula as shown in the upper left hand corner is: FICTION + NON FICTION + OTHER MATERIAL.

The relative ease in constructing formulas to describe and analyze numeric data is the strong selling point of programs such as Reflex.[2] All the mathematical functions associated with spreadsheet programs are available in such programs. In addition, they allow for complex sorting and data rearrangement that is the strength of database managers. Reflex also has a feature called "filtering" that allows the creation of detailed sub-sets of the database and the calculation of statistics on only that sub-set. In a large database composed of multiple departments, for example, one could search for only those records dealing with a single department, filter out all other records, and compute the summary statistics for the remaining department.

The ability to create a graphical representation of data is now a standard feature of spreadsheet programs and the analytical databases. Figure 3, for example, shows a pie chart in the left hand portion of the display. Reflex is able to show different displays in two windows as well. Similar simple graphs are available in Lotus and other analytical programs.

**Time Series Analysis**

Javelin is a program that is time-series oriented. While capable of handling data that is not date sensitive, it shines in the analysis of daily, weekly, monthly, quarterly, and yearly data. Figure 4 shows two views ofthe circulation data (both appear on the screen). On the top is a bar chart of the data. At the bottom is a listing of the actual monthly data. Javelin is capable of taking daily data and preparing a monthly summary with very few instructions. One merely changes a definition table from daily to monthly to create such a summary.

But of special importance to those doing time-series analysis are the many built-in functions of Javelin. It can calculate cummulative sums with a formula as simple as CUM(Total Circulation) which would yield a month-by-month running total of circulation. It can calculate totals, averages and the like between dates or from the beginning of a year, or year-to-date with a single formula. It can also calculate a correlation coefficient (Pearson's r) for one or two time series.

The TREND function in Javelin returns predicted values based on the least-squares line and these values can be plotted against the actual data. Figure 5 illustrates such a plot where the actual circulation of fiction is compared to the trend line. The formula to calculate this least-squares line is Fiction Trend = TREND(Circulation Fiction). Further, one can project into a future time period based on the least-squares lines as in Figure 6.

Given the complexities in computing least-squared lines, correlation coefficients, and other complex statistical tests, these built in functions are a boon for the data analyst.

**Multi-Unit Analysis**

In the simplistic illustration of circulation data used here, the differences between spreadsheet programs and analytical databases are not great differences. Both types of programs can calculate the summary statistics with ease, can construct graphs of various types, and produce nicely formatted tablesof the data.

The differences in the programs come to light when one needs to consolidate or bring together data from many different units of the library or one wishes toinspect data for only a selected segment of the total dataset.

A typical problem of this type faced the author when he set out to design an expenditure reporting system for a library system composed of 27 different reporting units. These included 13 branch libraries, several departments within the central library facility (adult and childrens departments, circulation department, etc.) and various system-wide departments (technical services, administrative services, etc.). The director of the library system wanted detailed breakdowns of expenditures by these reporting units (called cost centers) as well as summaries for the system at large. Detailed analysis of specific line item expenditures, often by cost center, was also desired.

The complexity of manipulating the database to provide the desired reports would, in the experience of the author, soon tax the capabilities of a spreadsheet program. While Lotus 1-2-3 contains a Data Management component, it is not especially easy to use nor flexible in handling many different types of analysis. The problem fell more in the sphere of database management than in spreadsheet analysis.

Figure 7 shows the data entry form that was designed on Reflex. Of particular interest is the provision of fields to enter a code for a detailed line item (LI on the form) and a code for the cost center (CC#). Formulas were developed that re-coded these detailed codes into actual names for the cost centers and more general line item categories (eg., Materials, Maintenance of Buildings and Grounds).

One reason Reflex was chosen is its ability to construct cross-tabulations of data. This permits the preparation of tables that combine all the cost centers into three categories (Branches, Main Library, System) and shows the total expenditures for each major line item category (Figure 8). By redefining which fields were to be cross tabulated, the library staff could inspect data for various groupings of cost centers or summarize detailed expenditures by month. A report module in Reflex provides even more flexibility in combining and re-arranging the data.

Javelin, on the other hand, provides a feature for consolidating various units that is rather unique. One constructs an organization chart (Figure 9) of multiple units and multiple levels. As illustrated, Central Services is composed of Technical Services, Circulation, and General Services. This is linked to a Main Library category which is further linked to the total system category. Reports can be prepared for any box in the organization chart.

Figure 10 is an illustration of the Worksheet view in Javelin. This is very similar in appearance to a standard spreadsheet. The data have been summarized by quarters rather than months and are arrayed across the top of the worksheet with the line item categories down the side. Changing only the name in the upper left corner (Ocean County, in this example) to one of the other sub-divisions, immediately displays the summary data for that sub-division.

**Summary**

If one is responsible for the analysis of library statistical data for many different units of a library or wishes to see detailed data for a sub-set of a larger database, the capabilities of analytical database programs

such as Reflexand Javelin merit their attention. Javelin, in particular, is excellent in dealing with time-series data. Spreadsheet programs such as Lotus 1-2-3 should not be dismissed out of hand. They are a basic tool for the library analyst. Finally, it is important to note that data that resides on spreadsheet programs can be translated into the analytical databases quite easily. This allows the analyst to choose the tool that best fits the needs of the problem.

**Notes**

[1]Thirty different spreadsheet models specifically designed for libraries are contained in Philip M. Clark, *Microcomputer Spreadsheet Models for Libraries: Preparing Documents, Budgets, and Statistical Reports* (Chicago: American Library Association, 1985).

[2]The author has written several articles describing Reflex. See: P.M.Clark, "Reflex: The Analyst" *Library Software Review* 5:6 (November-December 1986), pp. 354-7. "Managing a Time-and-Cost Study with Reflex, The Analyst" *The Bottom Line* 1:1 (1986), pp. 37-41. "Scheduling Library Staff with Database Management Software and Post-Processing Problems with Lotus" *Library Software Review* 6:2 (March-April 1987), pp. 88-93.

**Software Described**

Javelin
Javelin Software Corporation
One Kendall Square, Building 200
Cambridge, MA 02139 USA

Lotus 1-2-3
Lotus Development Corp.
161 First Street
Cambridge, MA 02142 USA

Reflex: The Database Manager (formerly called Reflex: The Analyst)
Borland/Analytica, Inc.
4585 Scotts Valley Drive
Scotts Valley, California 95066 USA

**FIGURE 1: Lotus Spreadsheet Example**

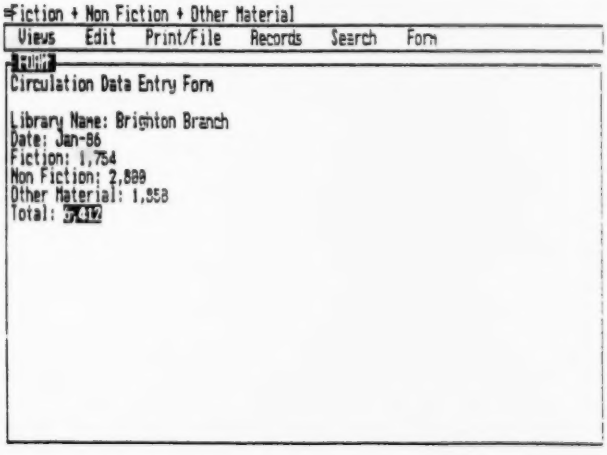



**FIGURE 2: Reflex Circulation Data Entry Form**

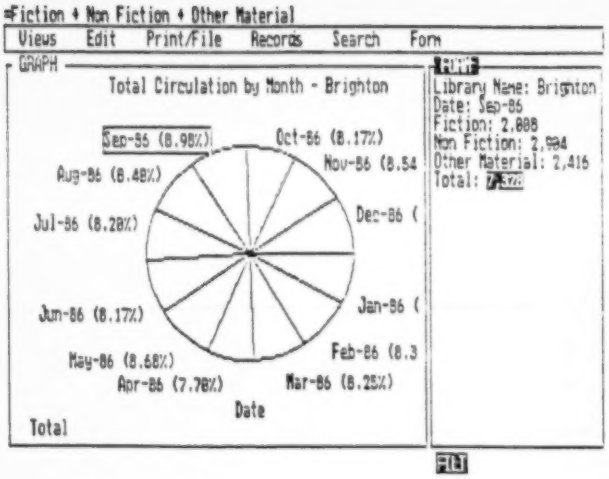



**FIGURE 3: Reflex Graph — Split Window**

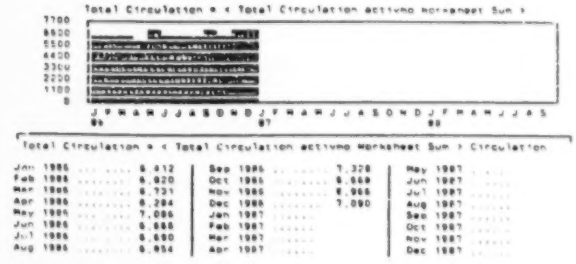


**FIGURE 4: Javelin Chart and Table — Split window**

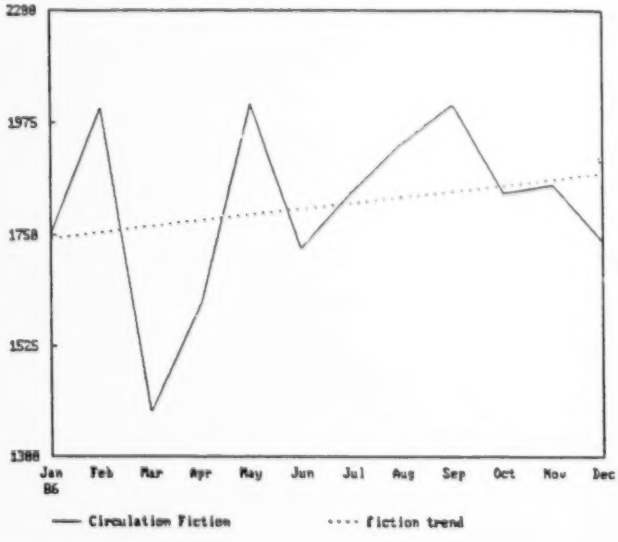



**FIGURE 5: Javelin Graph with Trend Line**

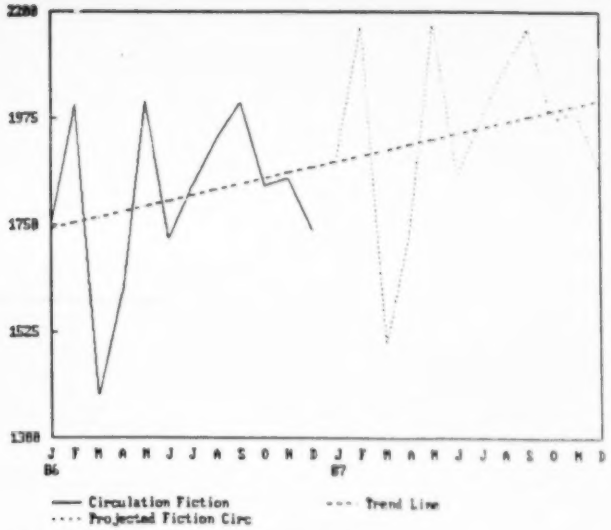



**FIGURE 6: Javelin Graph — Projection**

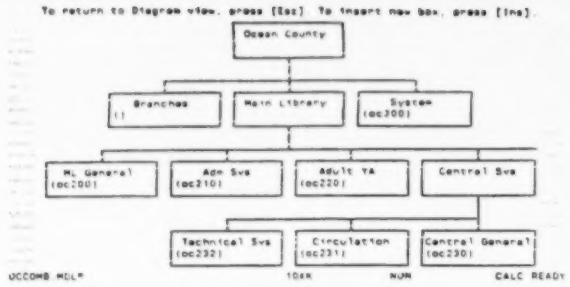
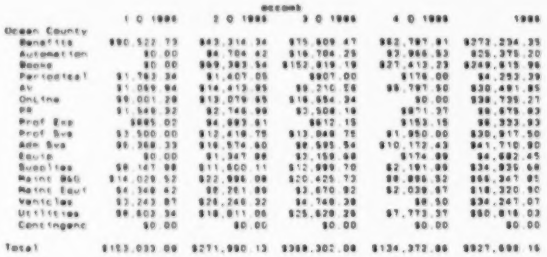



**FIGURE 9: Javelin Organization Chart**



| | | | | | |
|---|---|---|---|---|---|
| | | | occomb | | |
| | 1 Q 1986 | 2 Q 1986 | 3 Q 1986 | 4 Q 1986 | 1986 |
| Ocean County | | | | | |
| Benefits | $90,522.73 | $63,316.34 | $75,809.47 | $82,787.81 | $272,234.35 |
| Automation | $0.00 | $4,704.42 | $16,704.25 | $3,966.53 | $25,375.20 |
| Books | $0.00 | $69,383.54 | $152,819.19 | $27,413.23 | $249,615.96 |
| Periodical | $1,763.34 | $1,407.05 | $907.00 | $176.00 | $4,253.39 |
| AV | $1,069.94 | $14,413.95 | $9,210.58 | $9,797.50 | $30,491.85 |
| OnLine | $9,001.28 | $13,076.65 | $16,654.34 | $0.00 | $38,732.27 |
| PR | $1,548.32 | $2,748.99 | $3,508.19 | $871.37 | $8,676.83 |
| Prof Exp | $885.02 | $4,093.61 | $812.15 | $153.15 | $5,933.93 |
| Prof Svs | $3,500.00 | $12,418.75 | $13,048.75 | $1,950.00 | $30,917.50 |
| Adm Svs | $8,368.33 | $18,574.60 | $9,595.54 | $10,172.43 | $41,710.90 |
| Equip | $0.00 | $1,347.99 | $3,158.68 | $174.99 | $4,682.45 |
| Supplies | $8,167.98 | $11,600.11 | $12,999.70 | $2,191.99 | $34,935.68 |
| Maint Bld | $14,029.52 | $22,996.08 | $20,425.72 | $8,896.52 | $66,347.85 |
| Maint Equ | $4,368.42 | $8,261.89 | $3,670.92 | $2,039.97 | $18,320.90 |
| Vehicles | $3,243.87 | $26,246.32 | $4,760.38 | $0.50 | $34,241.07 |
| Utilities | $8,803.34 | $18,811.05 | $25,829.28 | $7,773.37 | $60,816.03 |
| Contingenc | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Total | $153,033.00 | $271,990.13 | $388,302.00 | $134,372.00 | $927,698.15 |

**FIGURE 10: Javelin Worksheet View**

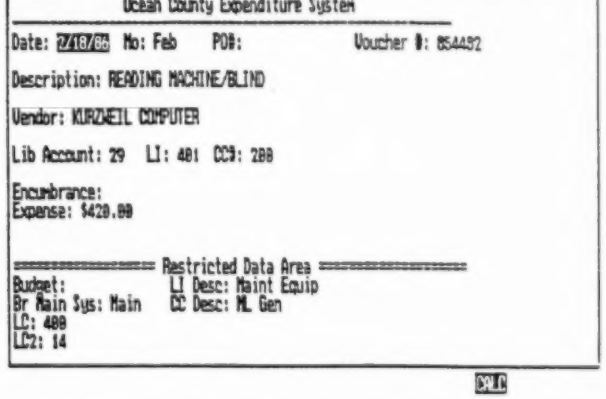



**FIGURE 7: Reflex Expenditure Data Entry Form**

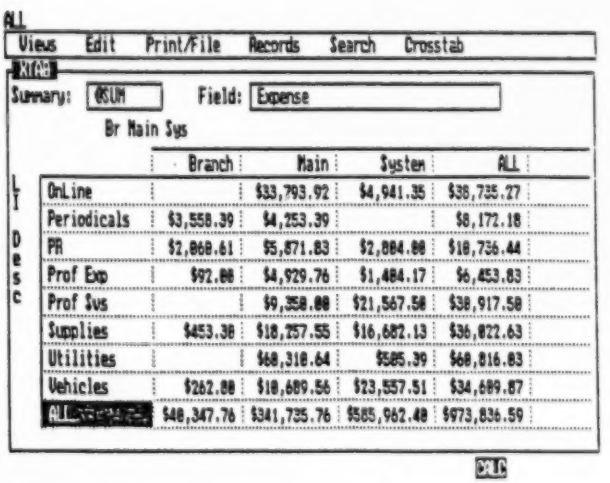



**FIGURE 8: Reflex CrossTab View**

*96-STAT-4-E*

## FOUR DECADES OF INTERNATIONAL LIBRARY STATISTICS

KHIN WAI THI,
*Division of Statistics on Culture and Communication, Office of Statistics, Unesco, Paris, France*

**ABSTRACT**

*Nearly forty years ago Unesco despatched its first statistical questionnaire on libraries to the then sixty Member States. These four decades of international library statistics are marked by close and fruitful collaboration between the Unesco Office of Statistics and the IFLA Statistics Section which has never failed to provide advisory services. Statistics Section members participated actively in the preparation and finalization of the Recommendation adopted by the Unesco General Conference in 1970. However, it was clear to all parties concerned that this Recommendation was not a culmination point but merely a necessary step towards a regular and comprehensive international data collection programme in the library field. The question of extending/ updating the Recommendation has remained one of the main discussion topics ever since and it is hoped that the Brighton meeting will provide another opportunity to review this matter and propose measures to improve the results of Unesco's library surveys.*

1. These lines constitute a kind of retrospective glance at almost four decades of international library statistics corresponding to four decades of close and fruitful collaboration between the Unesco Office of Statistics and various non-governmental organizations, in particular the International Federation of Library Association and Institutions and its Statistics Section, or the Committee on Statistics and Standards as it used to be called.

2. It all began in 1951 with the despatch to the then sixty Member States of a very simple questionnaire of just two pages, one containing some introductory and explanatory text, the other requesting, in one single table for five different types of libraries, some basic statistical information on their number, collections, circulation activities, visitors and registered borrowers. Today it seems worth-while to look back on these almost forty years of international library statistics, seeing how things have evolved since that very first survey, to try to determine where we stand now and to draw some conclusions for future action.

3. With regard to the scope, content, classification, etc. of statistics collected in the library field, it is interesting to note, for instance, that as

far as the different types of libraries are concerned, i.e. national, public, university, school and specialized libraries, the categorization used in the 1952 survey has not changed at all since that time. It was maintained in the 1970 Recommendation and is still applied in the Unesco questionnaires. From this it appears that despite various developments and changes in the functions and the functioning of libraries, there is general agreement that this by now almost classical breakdown is a valid one and is applied by many countries in their library statistics. As a matter of fact, TC 46 of the International Organization for Standardization in its draft proposal for a revised library standard has seen no reason to deviate from this categorization either.

4. The situation is somewhat different when it comes to the various kinds of data collected on each of these five types of libraries, at least as far as Unesco's data collection is concerned. With regard to the *number of libraries*, for instance, it was not until 1966 that a differentiation was introduced between administrative units and service points. The same holds for statistics on *collections* or holdings where for fifteen years only the number of volumes was requested regardless of the type of material, and it was only from 1966 on that a distinction was made between printed material and manuscripts. In that same year, the measurement unit was also changed from the number of volumes to the length of shelving. It should also be noted that until 1966 statistics on *accessions* in terms of volumes added to the book stock were surveyed only once; this type of data was left out of international library questionnaires for over ten years. Exactly the opposite occurred with statistics on *circulation* which referred in the beginning to the number of volumes lent (a) for home use, (b) for use in the library and (c) as inter-library loans. While the collection of statistics on the latter was discontinued after the first two surveys, the other two questions on circulation were omitted from the questionnaire altogether in 1966.

The questions that were maintained in all the surveys until 1970 without any change were those on the number of *periodical titles*, *registered borrowers* and *visitors to libraries* or on-the-premises-readers as they were later called. With regard to statistical data on the financial aspects of libraries, it can be noted that a detailed question on *current expenditure* was first introduced in 1954 while statistics on *capital expenditure* werecollected for the first time in the 1962 questionnaire. An item on *current income* appeared in only two surveys (1954 and 1956) and was never reconsidered again. Finally, statistical data on *personnel* were included for the first time in the 1962 questionnaire.

In conclusion, during the two decades prior to the adoption of the Recommendation in 1970, the Unesco library questionnaires were relatively simple as regards both scope and degree of detail of the statistics requested. The number of questions or items surveyed, five in the beginning, never exceeded nine and could be contained in a one-page table. The very fact, however, that all the statistics requested on the different types of libraries were to be consolidated into a single table suggests that the international surveys were carried out under the assumption that in each country there was one central agency, a kind of national library service managing and responsible for all libraries, regardless of whether they were school, public or specialized ones. This would also explain why, in all questionnaires prior to 1970, there were two questions concerning the number of libraries, one referring to libraries existing and the second to libraries reporting. Such a distinction can only be made if there is a central body that firstly keeps records of all libraries and is thus in a position to report on the number of libraries which exist, and secondly carries out the national library surveys, in order to be able to give the number of libraries reporting. Unfortunately this ideal situation seems to exist in very few countries and, as will be seen later, had certain consequences for the international data collection programme.

5. The year 1970, about midway between the despatch of the first library questionnaire and the present, was marked by the adoption by the Unesco General Conference of the Recommendation concerning the international standardization of library statistics. The main objective of this international instrument was to guide national authorities responsible for the collection and communication of library statistics by means of certain standards (definitions, classifications, presentation, etc.) which, if properly applied, would help improve the international comparability of these statistics.

What changes were brought about by this Recommendation? As a matter of fact, relatively few, especially if compared with the last two surveys prior to 1970. This should not really come as a surprise if one recalls that the Recommendation was the outcome of many years of discussion, consultations, meetings, etc., the results of which were already reflected, and thus tested, in the 1966 and 1968 questionnaires. The only real alterations were the introduction of a question on photographic and other copies and the re-introduction of a chapter on circulation, i.e. loans to users and inter-library lending. The rest consisted of minor modifications, for instance, providing for the reporting of statistics on microforms in the chapter on collections and additions, or of full-time and part-time staff separately in the question concerning library employees.

The Recommendation, therefore, should not be considered as something entirely new but rather the logical consequence of the experience gained and results obtained during twenty years of international data collection activities in this particular field. By adopting such an international instrument, the Unesco Member States undertook to follow certain principles that would help improve both the quantity and quality of national library statistics and thus increase their international comparability.

6. It was clear, however, from the very beginning that the implementation of this Recommendation would not be, and is still not, an easy task for most countries for various reasons, some of which are interlinked:

i) Hardly any country possesses a central agency responsible for library statistics;
ii) Very few countries have a statistical system equipped to undertake regular, systematic and comprehensive data collection in the library field;
iii) Should library surveys be undertaken by one country or another, it often happens that either their periodicity does not coincide with that of international data collection, or that the national library census concentrates on one type of library only or that important types of libraries such as specialized or school libraries are left out altogether;
iv) Finally, it appears that where library statistics are kept at the national level, their scope and content often differ from those of the 1970 Recommendation and subsequently from those of the Unesco questionnaires.

It was hoped that with the gradual implementation of the provisions contained in the Recommendation, some or even all of these obstacles would eventually be overcome and that as a consequence the quality and quantity of the library statistics reported by individual countries would improve, thus allowing some meaningful international comparison in this field.

7. However, international data collection following the adoption of the Recommendation in 1970 unfortunately did not come up to these expectations. Of the countries participating in the first survey based on this new international instrument, almost two-thirds returned the questionnaire, while in the following two surveys the overall response rate dropped from 56 per cent in 1975 to 48 per cent in 1978, showing a steady decrease in the number of replies. It should also be pointed out that of the 100-120 countries which returned replies in these three surveys, almost one-fifth stated that no data were available and another one-fifth provided data for only one type of library. Not more than 40-45 per cent of the questionnaires returned in a given survey could be considered more or less complete as far as the different categories of libraries were concerned. Whether they were complete with regard to the different types of statistics to be reported on each of the five categories of libraries is another question. Furthermore, the countries replying to the different surveys often changed, making it almost impossible to study trends and developments in specific library activities, at least for a representative number of cases.

8. Less than a year after the adoption of the Recommendation and before the first survey based on it was carried out (and consequently long before the results were known), a meeting took place in Prague (September 1971) in which participated, among others, representatives of the IFLA Statistics Committee and TC 46 of the ISO who discussed even then an extension of the data collection programme. In so doing they followed up a proposal made by a Special Committee of Governmental Experts that had met in the spring of 1970 to finalize the draft of the Recommendation and which, in its report, took the view that 'the draft Recommendation covers only part of the total field of library activities' and that 'other very important areas cannot yet be analyzed statistically because insufficient study has so far been carried out in methods of counting and in deriving at the necessary definitions'. The Special Committee recommended therefore 'that Unesco, in consultation with other interested International Organizations, especially IFLA, ISO and IFD, urgently sponsor further studies in these and other related areas'. The Prague meeting, following the recommendation of the Special Committee, requested Unesco to supplement its statistics in a first stage by introducing three items on library buildings and equipment, i.e. on the net area of buildings, seating capacity and total length of shelving.

9. The question of extending and/or updating the 1970 Recommendation remained one of the main topics on the agenda of the IFLA Statistics Section for several years (between the 38th and 42nd sessions of the General Council) until 1976 when a contract was signed with the Unesco Office of Statistics for the preparation of a working paper on the revision of the Unesco data collection

programme 'so as to include audio-visual materials and other pertinent items judged developed enough for inclusion in such an international instrument'. The draft proposals made in the working paper were discussed at the 1977 meeting in Brussels and guided the Unesco Office of Statistics in the preparation of the questionnaire for the 1978 survey. The changes brought to the previous questionnaires, i.e. those used in 1972 and 1975, were the following:

i) Inclusion of a question on the number of 'titles' in addition to volumes and metres of shelving in the paragraph on collections;
ii) Inclusion of a question on audio-visual materials in the paragraphs on collections and annual additions;
iii) Inclusion of a question on 'other library materials' (charts, maps, pictures, photographs, etc.) in addition to books and bound periodicals, manuscripts, microforms and audio-visual materials in the paragraphs on collections and additions;
iv) Inclusion of a question on 'metres of shelves added' to both total book stock and manuscript collections in the paragraph on additions;
v) Modification of the paragraph on loan transactions to combine the question of loans to users and the questions on inter-library lending within the country. Further, loan transactions, both national and international, were to be counted in number of requests received and satisfied, instead of number of volumes (either original or copied);
vi) Deletion of the question on capital expenditure which had a very poor response rate in the two previous surveys.

From the replies received to the 1978 and subsequent surveys, it appears that these modifications were well received and helped improve the comprehensiveness and clarity of the questionnaires, especially with regard to the introduction of data on audio-visual and other library materials and the amendments made to the questions on loan transactions. Among those countries replying, quite a few were able to return well-completed questionnaires but most of these belonged to the European region.

10. However, there was still the question of a relatively low and steadily-dropping overall response rate and also the fact that almost no country, even if it returned a questionnaire, was in a position to provide statistics on all types of libraries. There were no self-evident reasons, especially for the first phenomenon, i.e. the decreasing response rate, since as far as the Unesco Office of Statistics was concerned nothing had changed between the first survey in 1972 and the third one in 1978. The questionnaires were the same, the amount of data requested constant or even reduced, and the agencies to which the questionnaires were sent remained the same throughout the period under review, namely the National Commissions for Unesco. It could only be deduced that the questionnaires channelled through these National Commissions, especially in regions other than the European one, all too often did not reach those persons who could provide the data required or that these persons, faced with a request for an increasing amount of information, suffered from 'statistical questionnaire fatigue'. The fact that the drop in response occurred only in the developing regions suggested that it was somehow related to the specific situation in certain countries where the National Commissions for Unesco were often, or still are, understaffed or underwent frequent changes in personnel resulting in a certain inconsistency in the collection and reporting of data, i.e. in a lack of proper follow-up.

In order to try to remedy this situation, it was at the Copenhagen meeting in 1979 where the possibility was first introduced of splitting up the questionnaire into two or three separate ones. It was thought that such a measure would make the handling of the questionnaire easier for National Commissions with regard to the identification of the appropriate statistical source and that the positive effect of such a modification could possibly be increased if the timing of the surveys was changed and only one of these separate questionnaires despatched each year in turn, instead of all together every three years. These proposals received their final blessing at the pre-conference in Leipzig in 1981 and were first applied in the 1981/82 survey which consequently referred to national and public libraries only, while the two following surveys concentrated respectively on university and school libraries (1982/83) and specialized libraries (1984). Since then each of these three parts of the Unesco library questionnaire has been sent out a second time.

11. This new practice of sending out three separate questionnaires in turn initially brought about a clear improvement in the response rate of up to 20 per cent, depending on the type of library and the region. The results could have been even better if in some countries more consistency in the reporting of data were achieved. As an example, about one-third of the countries that completed the section on national and school libraries in the 1978 questionnaire did not react at all to the 1981/82 survey on the same types of libraries, most probably because the questionnaire was not sent to the source that provided statistics previously. Nevertheless there was an increase in the overall response rate for all five categories.

12. Unfortunately the promising results of the first round of surveys did not continue for the second one. As in the years between 1972 and 1978 it has not been possible to stabilize the number of replies at the highest level reached, again for reasons that escape rationalization. This is where we stand now and where the expertise and imagination of the IFLA Statistics Section is needed to find a remedy to this somewhat difficult situation. It should be recalled that certain possible solutions have been advanced at earlier meetings of the Statistics Section and may be worth reconsideration. There was, for instance, the suggestion of a simplified questionnaire that could be sent to those countries which have difficulty in replying to or are discouraged by the regular and very detailed Unesco questionnaire. There was also the idea of two model questionnaires, one institutional and one national, that could be introduced by the national IFLA committees in those countries where a regular and systematic collection of library statistics has not yet been started. Another idea was that of setting up a network of clearing-houses in various regions whose function would be to serve as resource centres on the mechanics and modalities of collecting and analysing library statistics in different countries of the respective regions. The Brighton meeting will hopefully provide a further opportunity for discussion of these suggestions and at the same time come up with some additional proposals that may give a boost to national collection and international reporting of library statistics. It is also hoped that some time could be devoted to the examination of certain terms and items contained in the present questionnaire, such as 'borrowers' and 'loans to users', which seem to have led to misunderstanding in the past, to try to remove any ambiguity once and for all.

Printed in England by Imprint of Luton Ltd,
Rainson House, Alton Road, Luton, Beds LU1 3NS